**T04D05 – Resonance**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Resonance can be considered as the condition occurring when more than one valid Lewis structure can be written for a particular molecule.

### Resonance structures are imaginary. They represent extremes of electron location. Resonance can be considered as a valence theory solution to a molecular orbital problem.

*The actual structure of a molecule is a weighted average of all resonance contributors.* The result is that the electrons are distributed over the entire molecule, and not isolated, as suggested by individual resonance structures. For the *Resonance in Motion* examples below you can think of is as if the structures were changing infinitely fast, so that electrons and charges were everywhere at once.

1. Draw **ALL** resonance structures for each of the following molecules or ions.

Carbonate ion, CO3-2

Nitrite ion, NO2-1

Nitrate ion, NO3-1

Laughing gas, N2O